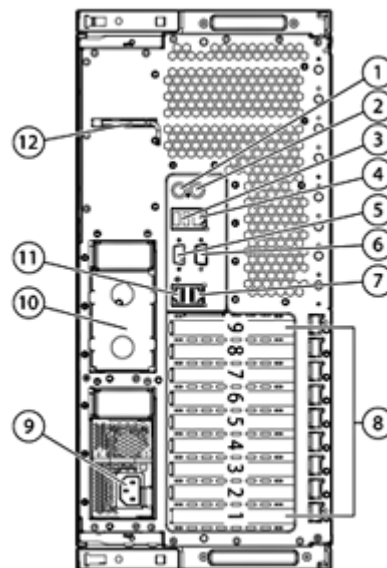
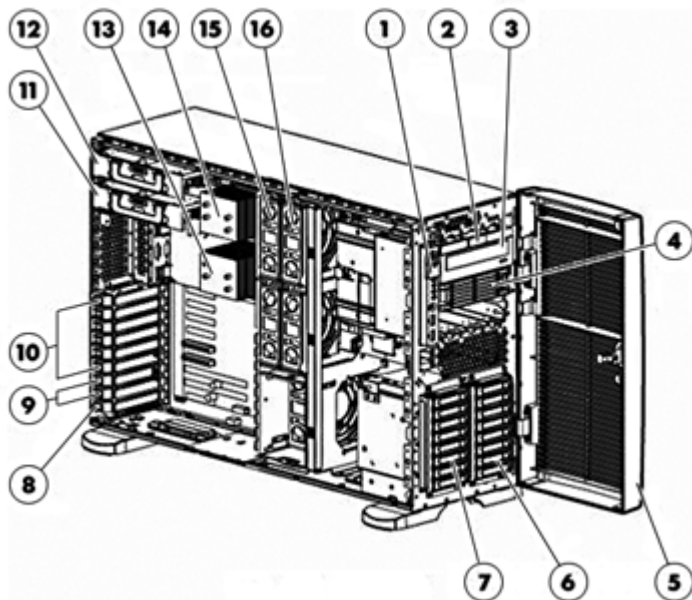


Overview

HP ProLiant ML370 G5 Model (tower)



Front View:

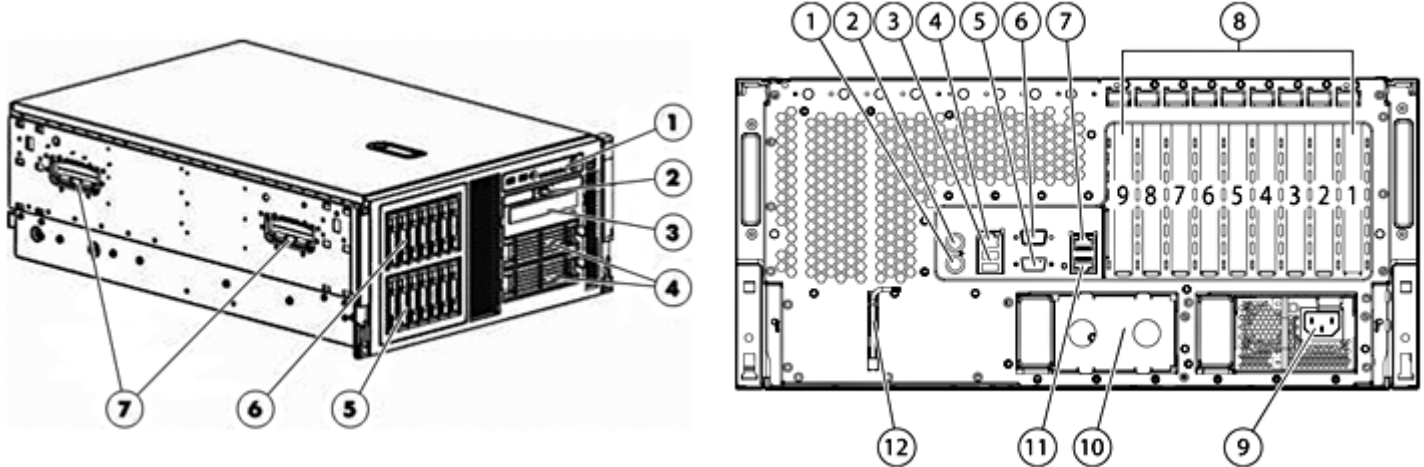
1. System Insight Display (SID)
2. Media Bay Spacer (Tower)/Video Connector (Rack)
3. DVD/CD-ROM Drive
4. Removable Media Bays
5. Front Bezel (Tower Model Only)
6. Hard Drive Bays 1-8 (Serial-attached SCSI (SAS) drives supported - SFF)
7. Hard Drive Bays 9-16 - Optional Drive Cage (Serial-attached SCSI (SAS) drives supported - SFF)
8. Integrated RAID Controller Slot
9. (2) PCI-X 64 Bit/133MHz Slot
10. (6) PCI-Express x4 Slot
11. (8) PC2-5300 Fully Buffered DIMM Slots per memory card - Standard
12. (8) PC2-5300 Fully Buffered DIMM Slots per memory card - Optional
13. Dual-Core Intel Xeon processor - Optional
14. Dual-Core Intel Xeon processor - Standard (2 processors standard on all Performance Models)
15. (3) Hot Plug Redundant Fans - Standard
16. (3) Hot Plug Redundant Fans - Optional

Rear View:

1. Keyboard connector
2. Mouse connector
3. USB connectors
4. Integrated Lights-Out 2 (iLO 2) management connector
5. Video connector
6. Serial connector
7. NIC 2 connector
8. PCI expansion slots
9. Hot-plug power supply (primary bay)
10. Hot-plug power supply blank (redundant bay)
11. NIC 1 connector
12. T-15 Torx screwdriver

Overview

HP ProLiant ML370 G5 Model (Rack)



Front View:

1. System Insight Display (SID)
2. Video Connector
3. DVD/CD-ROM Drive
4. Removable Media Bays
5. Hard Drive Bays 1-8 (Serial-attached SCSI (SAS) drives supported - SFF)
6. Hard Drive Bays 9-16 - Optional Drive Cage (Serial-attached SCSI (SAS) drives supported - SFF)
7. Rack Handles

Rear View:

1. Keyboard connector
2. Mouse connector
3. USB connectors
4. Integrated Lights-Out 2 (iLO 2) management connector
5. Video connector
6. Serial connector
7. NIC 2 connector
8. PCI expansion slots
9. Hot-plug power supply (primary bay)
10. Hot-plug power supply blank (redundant bay)
11. NIC 1 connector
12. T-15 Torx screwdriver

What's New

- Quad-Core Intel® Xeon® X5470 processor

At A Glance

The flagship ML370 G5 provides industry-leading management, performance and availability in a dual processor expansion server engineered to excel in a variety of environments - from corporate work groups in growing businesses to critical remote sites requiring continuous accessibility and uptime.

Processors:

- Quad-core Intel® Xeon® 5400 sequence processors with 12MB Level 2 cache (6MB per die) for blazing performance
- Servers support up to 2 processors (2 processors standard on all Performance models)
- Preconfigured Performance models save valuable deployment time at a discounted bundle price
- Intel® 5000P chipset

Memory:

- Maximum 64 GB of PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 667MHz of 4:1 interleaved memory with Advanced ECC capabilities including Online Spare and Mirrored Memory (8 FB DIMMs per memory card;

Overview

up to 2 supported)

NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

- **Storage Controller:**
 - Base Models: HP Smart Array P400/256MB Controller
 - Performance Models: HP Smart Array P400/512MB BBWC Controller
 - Entry Models: HP Smart Array E200/64MB Controller
- **Internal Drive Support:**
 - Up to (16) hot-plug Serial-attached SCSI (SAS) drives supported
 - (8) drive bays in standard configurations
 - Optional 8-bay drive cage available for maximum storage support (2nd drive bay cage will require additional SAS controller)
 - Two open half-height media bays; supports full height or half height internal tape drive
- **Network Controller:**
 - Two embedded NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit
- **Expansion Slots:**
 - Nine total expansion slots
 - Eight available: (6) PCI-Express x4 and (2) PCI-X 64-Bit/133MHz
- **Integrated Hypervisors (Optional):**
 - VMware 3i virtualization technology
 - Citrix XenServer virtualization technology
- **USB Ports:**
 - USB 2.0 support
 - Six total ports: (2) ports up front; (2) ports in back; (2) ports internal (one standard connection and one USB tape connection)
- **Redundancy:**
 - Optional Hot plug redundant power supplies and cooling fans
 - Hot plug redundant fans and power supplies included on all Performance models
- **Management:**
 - HP Insight Control Environment server management software
 - Integrated Lights-Out 2 featuring Integrated Remote Console with KVM over IP performance over shared network access
 - HP Power Regulator for ProLiant, delivering integrated power monitoring and server level, policy based power management for industry leading energy efficiency and savings on system power and cooling costs
 - Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU), HP System Insight Manager, Status LEDs including system health and UID and SmartStart
 - Systems Insight Display for quick and easy server diagnostics (front drop-down panel)
- **Form Factor:**
 - 5U tower and rack models available (front VGA connection on rack models)
- **Deployment/Serviceability:**
 - Quick Deploy Rail System includes sliding universal rails, an ambidextrous cable management arm and quick release levers
 - Tool-less access to all system components for easy in-rack serviceability
 - Customer Self Repair (CSR): HP products are designed with many CSR parts to minimize repair time and allow for greater flexibility in performing defective parts replacement
- **Warranty:**
 - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. SATA hard drives have a one-year warranty. SAS Enterprise drives have a three-year warranty.
NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These

Overview

parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

Standard Features

NOTE: For a brief, printer friendly data sheet that describes this product and informs you of the essential capabilities and specifications, please visit: <http://h71028.www7.hp.com/ERC/downloads/4AA0-6361ENW.pdf>.

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor

One of the following depending on Model

Quad-Core Processors

Quad-Core Intel® Xeon® Processor X5470 (3.33 GHz, 120 Watts, 1333 FSB)

Quad-Core Intel® Xeon® Processor X5450 (3.00 GHz, 120 Watts, 1333 FSB)

Quad-Core Intel® Xeon® Processor E5450 (3.00 GHz, 80 Watts, 1333 FSB)

NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details.

Quad-Core Intel® Xeon® Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB)

Quad-Core Intel® Xeon® Processor E5430 (2.66 GHz, 80 Watts, 1333 FSB)

Quad-Core Intel® Xeon® Processor E5420 (2.50 GHz, 80 Watts, 1333 FSB)

Quad-Core Intel® Xeon® Processor E5410 (2.33 GHz, 80 Watts, 1333 FSB)

Quad-Core Intel® Xeon® Processor X5365 (3.00 GHz, 120 Watts, 1333 FSB)

Quad-Core Intel® Xeon® Processor X5355 (2.66 GHz, 120 Watts, 1333 FSB)

Quad-Core Intel® Xeon® Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB)

Quad-Core Intel® Xeon® Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB)

Quad-Core Intel® Xeon® Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB)

Quad-Core Intel® Xeon® Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB)

Dual-Core Processors

Dual-Core Intel® Xeon® Processor X5260 (3.33 GHz, 80 Watts, 1333 FSB)

Dual-Core Intel® Xeon® Processor L5240 (3.00 GHz, 40 Watts, 1333 FSB)

Dual-Core Intel® Xeon® Processor X5160 (3.0 GHz, 80 Watts, 1333 FSB)

Dual-Core Intel® Xeon® Processor X5150 (2.67 GHz, 65 Watts, 1333 FSB)

Dual-Core Intel® Xeon® Processor X5140 (2.33 GHz, 65 Watts, 1333 FSB)

Dual-Core Intel® Xeon® Processor X5130 (2.0 GHz, 65 Watts, 1333 FSB)

Dual-Core Intel® Xeon® Processor X5120 (1.86 GHz, 65 Watts, 1066 FSB)

Dual-Core Intel® Xeon® Processor X5110 (1.6 GHz, 65 Watts, 1066 FSB)

NOTE: Up to 2 processors supported. Performance configurations include two processors.

Cache Memory

One of the following depending on Model

4 MB (2 x 2 MB) Level 2 cache (5000 series)

4 MB (1 x 4 MB) Level 2 cache (5100 series)

6 MB (1x 6 MB) Level 2 cache (5200 series)

8 MB (2 x 4 MB) Level 2 cache (5300 series)

12 MB (2 x 6 MB) Level 2 cache (5400 series)

Chipset

Intel® 5000P Chipset

NOTE: For more information regarding Intel chipsets, please see the following URL:

<http://www.intel.com/products/server/chipsets/>.



Standard Features

Upgradeability

Upgradeable to 2 processors

Future upgradeable to Xeon® Series 5400/5300 Quad-Core processors (Please contact your regional sales support to determine quad core upgradeability. Some of the earlier shipping models may not support this upgrade). 5100 Dual-Core models are not upgradeable to the 5200 Dual-Core processors.

Memory Protection

Advanced ECC, Online Spare and Mirroring

NOTE: Mirroring requires optional 2nd memory card.

Memory

One of the following depending on Model

Type

PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 533 MHz with 4:1 interleaving

NOTE: 4-way interleaving requires optional 2nd memory card.

Standard
(Entry Models)

1 GB (2 x 512 MB)

Standard
(Base Models)

2 GB (2 x 1 GB)

Standard
(Performance Models)

4 GB (4 x 1 GB)

Maximum

64 GB (16 x 4 GB with 2 memory cards)

NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

Network Controller

Two embedded NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit

Expansion Slots

Expansion Slot #	Technology	Width	Connector Width*	Bus Number**	Form Factor	Notes
1	PCIe	x4	x8	6	Full length, full height slot	Reserved for integrated RAID controller
2	PCI-X (133MHz, 3.3 Volt)	64-bit	Not applicable	18	Full length, full height slot	Shared bus with slot 3
3	PCI-X (133MHz, 3.3 Volt)	64-bit	Not applicable	18	Full length, full height slot	Shared bus with slot 2
4	PCIe	x4	x8	14	Full length, full height slot	
5	PCIe	x4	x8	11	Full length, full height slot	Optional x8 if PCIE expander is installed in slot 4

Standard Features

6	PCIe	x4	x8	31	Full length, full height slot	
7	PCIe	x4	x8	28	Full length, full height slot	Optional x8 if PCIe expander is installed in slot 6
8	PCIe	x4	x8	25	Full length, full height slot	
9	PCIe	x4	x8	22	Full length, full height slot	Optional x8 if PCIe expander is installed in slot 8

* Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.

** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

Storage Controller One of the following depending on Model	Base Models	HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5) Available upgrades: 512MB memory BBWC module for, or battery for battery-backed write cache (BBWC) RAID 0/1/1+0/5/6.
	Performance Models	HP Smart Array P400/512MB BBWC Controller (RAID 0/1/1+0/5/6)
	Entry Models	HP Smart Array E200/64MB Controller (RAID 0/1/1+0) Available upgrades: 128MB memory module for RAID 0/1/1+0/5, battery for battery-backed write cache (BBWC).

Storage	Diskette Drive	None standard
	Optical Drive	DVD-ROM Drive (Performance Models)
	One of the following depending on Model	48x IDE CD-ROM Drive (Base and Entry Models) NOTE: All units after 11/12/2007 will come standard with a DVD-ROM Drive.
	Hard Drives	None standard

Maximum Internal Storage	Hot Plug SAS	2.4TB	8 x 300GB with standard 8-bay hot plug Serial-attached SCSI (SAS) drive cage
		4.8TB	16 x 300GB with optional 2nd SAS drive cage
	Hot Plug SATA	4.0TB	16 x 250GB

Standard Features

Intelligent Manageability	HP Systems Insight Manager SmartStart Management Agent Redundant ROM Remote Flash ROM ROM-Based Setup Utility (RBSU) Integrated Management Log Automatic Server Recovery (ASR) Dynamic Sector Repairing (with Smart Array controller) Drive Parameter Tracking (with Smart Array controller) Hot Spare Boot NOTE: Upon the event of a failed processor in a multi-processing environment, the system will automatically reboot and attempt to use the remaining good processor. Pre-Failure Warranty (covers processors, SAS hard drives and memory)
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Interfaces	Serial	1 (2nd serial and parallel port available via option Kit)
	Pointing Device (Mouse)	1
	VGA	1 (+1 front VGA on rack models)
	Keyboard	1
	Network RJ-45	2
	iLO 2 remote management port	1
	USB 2.0 Ports	5 (2 on the rear, 2 on the front, 1 internal) NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html
	Dedicated USB 2.0 Port	1 (available for DAT USB tape connectivity) NOTE: Internal USB ports are optimal for the attachment of HP DAT USB Internal Tape Drives

Graphics	Integrated ATI ES1000, 32 MB video standard <ul style="list-style-type: none">16 bit color: maximum resolution of 1600 x 120032 bit color: maximum resolution of 1280 x 1024 NOTE: Maximum resolution available via iLO 2 remote console is 1280 x 1024.
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Form Factor	Tower and Rack (5U) models available
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Standard Features

HP Insight Control Management Suite

HP Insight Control Environment delivers foundation management, including proactive health management, lights out remote control, optimization of power usage, rapid server deployment, performance analysis, vulnerability scanning and patch management and virtual machine management.

HP Insight Control Environment installs and licenses the following components by default using a wizard-based integrated installer:

- HP Systems Insight Manager
- HP iLO Advanced Pack
- HP Insight Power Manager
- HP Performance Management Pack
- HP Vulnerability and Patch Management Pack
- HP Virtual Machine Management Pack

Additional Insight Software standalone products and management tools included on the Insight Software media kit can be installed manually:

- HP Server Migration Pack - Universal Edition
NOTE: HP Server Migration Pack - Universal Edition is licensed separately from the Insight Control Environment Suite.
- HP Open Service Event Manager
- HP Service Essentials Remote Support Pack

NOTE: Server Migration Pack - Universal Edition can be installed from the SMP Universal CD included in the Insight Software media kit.

NOTE: For additional product and licensing information about HP Insight Control Environment, visit: <http://www.hp.com/go/ice>.

HP iLO Power Management Pack is energy-efficient management software that delivers centralized control, reliable security, and energy savings for your BladeSystem infrastructure. iPMP combines the total control of iLO 2 Advanced in the area of remote management with the energy monitoring and control of the Insight Power Manager to deliver a robust solution capable of full remote control and power management of ProLiant servers through a unified interface within HP Systems Insight Manager.

NOTE: As of Feb. 1, 2009, HP iLO Power Management Pack is being discontinued. Customer can either purchase HP Insight Control Environment suite which contains all the components of IPMP or the standalone components which include iLO Advanced, Insight Power Manager and System Insight Manager.

HP Insight Control Environment suite and most HP ProLiant Essentials include a one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: <http://www.hp.com/services/insight>.

Server Management Stand Alone Software Products

HP Systems Insight Manager

HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible standards-based environment to centrally manage servers, storage and other infrastructure devices, (both HP and non-HP) across multiple operating system platforms.
For additional information, please see: www.hp.com/go/insight

Standard Features

HP Rapid Deployment Pack	Rapid Deployment Pack (RDP) extends HP Systems Insight Manager with a complete deployment solution for HP ProLiant servers. RDP provides a central location to configure server hardware, deploy Windows, Linux and VMware ESX operating environments and install HP ProLiant Support Pack drivers using images and scripted profiles. For more information, visit: http://www.hp.com/go/rdp .
HP Server Migration Pack - Universal Edition	Upgrading, replacing, or virtualizing your existing server? Effortlessly transition to new virtual or physical HP ProLiant servers or BladeSystem with automated, accurate and affordable migration of OS, application and data. SMP Universal automates the manual processes required for migrating servers between physical or virtual platforms, whether migrating to VMware or Microsoft virtual machines. SMP Universal allows all of the following migrations: <ul style="list-style-type: none">• physical to ProLiant• physical to virtual• virtual to virtual• virtual to ProLiant
HP Insight Dynamics - VSE	NOTE: For more information, visit: http://www.hp.com/go/migrate . Introducing HP Insight Dynamics - VSE, the world's first software integrated by design to let IT professionals analyze and optimize their virtual & physical environments in the same way. It combines the best of the industry-leading HP infrastructure management portfolio-including HP Systems Insight Manager, HP Insight Control and HP Virtual Server Environment-into one integrated offering for HP BladeSystem, ProLiant and Integrity servers. NOTE: For more information, visit: http://www.hp.com/go/insightdynamics
HP Integrated Lights-Out (iLO 2) Advanced Pack	Upgrades the iLO 2 processor with comprehensive remote control including Virtual KVM remote graphical console, power management capabilities such as power measurement, regulation, and capping, new iLO Text Console, automatic and on-demand video recording of server events, global team collaboration for up to four remote users, virtual media (floppy, CD/DVD, USB key), virtual folders, and enterprise security (directory services and two-factor authentication). For additional information, please see: www.hp.com/go/iLO
HP iLO Power Management Pack	Energy-efficient management software that delivers centralized control, reliable security, and energy savings for your BladeSystem infrastructure. iPMP combines the total control of iLO 2 Advanced in the area of remote management with the energy monitoring and control of the Insight Power Manager to deliver a robust solution capable of full remote control and power management of ProLiant servers through a unified interface within HP Systems Insight Manager. For additional information, please see: www.hp.com/go/iLO
HP Accelerated iSCSI Pack	Enables the embedded Multifunction network controller to serve as both a NIC and an iSCSI HBA providing access to SAN storage over the same connection used for networking. Processing of the protocol stack is offloaded to the NIC reducing CPU utilization and greatly improving the speed with which the requests are processed and sent to the network. For additional information, please see: www.hp.com/go/iscsi

Standard Features

HP Insight Power Manager (IPM)

Upgrades the single-server remote management capabilities of iLO Select/Advanced to include centralized reporting and policy-based management of power consumption and thermal output provided by the Insight Power Manager. IPM unifies all of this functionality within a single user interface - HP Systems Insight Manager. For additional information, please see: www.hp.com/go/ipm

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to: <http://www.hp.com/servers/proliantessentials> or the various ProLiant Essentials Value Pack product QuickSpecs for more information.

Core Infrastructure Management

HP Foundation Pack

Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters.

HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: www.hp.com/go/foundation.

The foundation pack includes:

- HP SmartStart
- HP Management
- HP ProLiant Firmware Maintenance

SmartStart version supported (minimum): SmartStart 7.51
<http://www.hp.com/servers/smartstart>

Remote Management

iLO 2 Standard Management:

- Virtual Text Remote Console (pre-OS only)
- Remote Serial Console
- Virtual Power Button Control
- Virtual Unit ID control
- Dedicated & full function shared network connectivity
- Embedded system health
- Browser, command line and scripted access
- Automatic IP Configuration via DHCP/DNS/WINS
- Industry Standard 128-bit Secure Sockets Layer (SSL) and Secure Shell security (SSH)
- OS independent hardware health status
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access privilege

Insight Management Agents

The Insight Management Agents should be installed on all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers.

Insight Management Agents and The HP System Management

Standard Features

Homepage are included on ProLiant Support Packs, and can also be installed using the server profiles provided with the Rapid Deployment Pack.

For additional information about the Management Agents and the HP System Management Homepage please visit the management Web site at: <http://www.hp.com/servers/manage>.

Subscriber's Choice

Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides software and driver change notifications for ProLiant products. Sign up at: <http://www.hp.com/go/subscriberschoice> and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.

ProLiant Support Packs and ROMPaq, software

The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options, available through ProLiant Support Packs the ProLiant Essentials Rapid Deployment Pack, SmartStart or downloaded from software and drivers download pages website at: <http://www.hp.com/go/support>.

HP Serviceguard for Linux (SGLX)

HP Serviceguard for Linux provides high availability clustering for Linux applications running on HP Integrity, HP ProLiant and other supported industry-standard servers. Serviceguard for Linux reduces planned and unplanned downtime and delivers efficient, continuous access to business-critical applications - with all of the enterprise features you expect from HP.

This high availability clustering solution is designed to protect applications and services from a wide variety of software and hardware failures, monitoring the health of each server (node) and quickly responding to failures such as those that affect system processes, system memory, LAN media and adapters, and application processes.

For the most recent list of Linux distributions & kernels, servers and storage supported with Serviceguard for Linux, please see: ftp://ftp.compaq.com/pub/products/servers/ha/linux/SGLX_Certification_Matrix.pdf

The following is a quick summary of HP Serviceguard for Linux features and support:

- Supported Virtual Machines
 - SG/LX in HP Integrity Virtual Machines guests
 - SG/LX in VMware ESX guests
 - SG/LX in Red Hat and SUSE Xen hosts (DOM0)
- Application Integration Toolkits
 - HP Serviceguard for Linux Oracle Database Toolkit
 - HP Serviceguard Extension for SAP on Linux (SGeSAP/LX)
 - Free Application Integration Toolkits:
 - Apache
 - MySQL
 - NFS
 - PostgreSQL
 - Samba
 - Tomcat
 - Sendmail
- Disaster Tolerant Solutions
 - HP Serviceguard for Linux Extended Distance Cluster (XDC) extends cluster distances up to 100 km, utilizes software RAID mirroring for data replication and is

Standard Features

- storage array independent
- HP StorageWorks XP/EVA Cluster Extension Software for Linux (CLX) works seamlessly with HP Serviceguard for Linux, HP StorageWorks Continuous Access, and HP Disk Arrays to automate failover and failback between sites
- Software updates are distributed by HP Services to customers with support contracts

NOTE: For additional information including software and server support on HP Serviceguard for Linux, visit: <http://www.hp.com/go/sglx> or see the HP Serviceguard for Linux QuickSpecs.

NOTE: HP Serviceguard for Linux products for HP ProLiant and select 3rd party x86 class servers include one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: <http://www.hp.com/services/swsupport>.

Industry Standard Compliance

ACPI 1.0b Compliant
PCI 2.2 Compliant
WOL Support
Microsoft® Logo certifications
PXE Support

Security

Power-on password
Keyboard password
Diskette drive control
Diskette boot control
QuickLock, Network Server Mode
Parallel and serial interface control
Administrator's password

Server Power Cords

110V NEMA -6ft. (1.83m) cord included; IEC 6 ft. (1.83m) cords also included with rack models.
NOTE: HP ProLiant ML370 a C13 to C14 2.8M jumper cord ships standard. If customers require a local power cord, they can check the power cord matrix for the appropriate sku. Please see the following power cord matrix: <http://www.hp.com/go/powercordmatrix>.

Power Supply

800 Watt-CE Mark Compliant Hot Plug Power Supply (1000 Watt high line)
Optional second Power Supply provides redundant capability
NOTE: Please see the "Power Specifications" section later in this document for low line and high line requirements.

UPS and PDU Power Cord Matrix

Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units:
<http://h18004.www1.hp.com/products/servers/proliantstorage/power-protection/index.html>.

System Fans

Three hot-plug fans standard. Redundant fan kit includes three additional fans.

Required Cabling

For external storage cabling information, refer to the Web site at: www.hp.com/servers/ml370.

Standard Features

OS Support

Microsoft Windows Server 2000
Microsoft Windows Server 2003 R2
Microsoft Windows Small Business Server 2003 R2
Microsoft Windows Server 2008
Microsoft Windows Server 2008 Hyper-V
Microsoft Windows Small Business Server 2008 and Microsoft Windows Essential Server 2008
Oracle Enterprise Linux (OEL)
Red Hat Enterprise Linux
SUSE Linux Enterprise Server
Novell NetWare
SCO OpenServer
SCO UnixWare
VMware
Citrix XenServer

NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <http://www.hp.com/go/supportos> and our driver download page <http://www.hp.com/support/ML370G5>

Rack Airflow Requirements

Rack 10000 series Cabinets

The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

- **Front and rear doors:** If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).
- **Side:** The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm).

CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: www.hp.com/servers/ml370.

Installation of HP ProLiant ML370 G5 servers with Round Hole, Third Party or Telco Racks

ProLiant rack mount servers and tower-to-rack kits include snap-on quick deploy side rails designed to accommodate both round and square hole rack rails. Telco rack solutions for ProLiant servers are available through the following URL: <http://www.racksolutions.com/hp>.

Standard Features

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAXxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: <http://www.hp.com/go/factory-express>.

HP Enterprise Configurator

The HP eConfigure-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance.

Service and Support

HP Care Pack services provide total care and support expertise with committed response designed to meet your IT and business needs.

HP Care Pack services include coverage for the HP branded hardware options qualified for the server and purchased at the same time or afterward that are internal to the enclosure. This also includes the 22" and smaller external monitors and tower UPS options up to 3kVA. These items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included, and standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

To fully capitalizing on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions, provides a range of support services designed to meet the varying needs of your business. Whether an SMB, or large global corporation, HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

Recommended Service - simplify ProLiant solution implementation, maintenance, and management.

- **Support:** 3-Year 4-Hour response 24x7 Same Business Day Coverage only
- **Deployment Service:** Installation and Start up only

Enhanced Service - optimize service level to increase IT performance and availability.

- **Support:** 3-Year Support Plus 24 only

Refer to the information on "Installation & Start-Up" for service on ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet; to be delivered on a scheduled basis 8am-5pm, M-F, excluding HP holidays.

NOTE: For a complete listing of service offerings and information visit: <http://www.hp.com/services/proliantservices>

Standard Features

<http://www.hp.com/go/proliant/carepack>

Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information – Factory Integrated Models" section.

HP ML370 G5 Performance Models	Processor(s)	(2) Quad-Core Intel® Xeon® Processor X5450 (3.00 GHz, 120 Watts, 1333 FSB)
	Two of the following depending on Model	
Tower Models: Quad-Core: ML370T05 X5450 458341-001	Cache Memory	12MB (2 x 6 MB) Level 2 cache - 5400 Sequence
	Memory	4 GB (4 x 1 GB); 2 memory cards (2 x 1 GB each card)
Rack Models: Quad-Core: ML370R05 X5450 458342-001	Network Controller	Embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400/512MB BBWC Controller (RAID 0/1/1+0/5/6)
	Hard Drive	None ship standard
	Internal Storage	SAS: 4.8TB maximum with 16 SFF drive option SATA: 4.0TB maximum
	Optical Drive	DVD-ROM Drive (diskette drive optional)
	Availability	Hot Plug Fully Redundant fans and Hot Plug supplies standard
	Form Factor	Tower
	One of the following depending on Model	Rack (5U), (8.75-inch)

HP ML370 G5 Base Models	Processor(s)	(1) Quad-Core Intel® Xeon® Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB)
	One of the following depending on Model	(1) Quad-Core Intel® Xeon® Processor E5430 (2.66 GHz, 80 Watts, 1333 FSB)
Tower Models: Quad-Core: ML370T05 E5440 458343-001 ML370T05 E5430 458345-001	Cache Memory	12MB (2 x 6MB) Level 2 cache - 5400 Sequence 6MB (1 x6MB) Level 2 cache - 5200 Sequence
	One of the following depending on Model	
Dual-Core: ML370T05 X5260 458425-001	Memory	2 GB (2 x 1 GB); 1 memory card
	Network Controller	Embedded NC373i Multifunction Gigabit Server Adapters
Rack Models: Quad-Core: ML370R05 E5440 458344-001 ML370R05 E5430 458346-001	Storage Controller	HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	None ship standard
	Internal Storage	SAS: 4.8TB maximum with 16 SFF drive option SATA: 4.0TB maximum
	Optical Drive	48x CD-ROM Drive (diskette optional)
	DVD-ROM standard after 11/12/07	
	Availability	Redundant Power/Fans Optional
Dual-Core: ML370R05 X5260 458426-001	Form Factor	Tower
	One of the following depending on Model	Rack (5U), (8.75-inch)

Models

HP ML370 G5 Entry Models Tower Models: Quad-Core: ML370T05 E5410 458347-001 Dual-Core: Rack Models: Quad-Core: ML370R05 E5410 458348-001	Processor(s) One of the following depending on Model	(1) Quad-Core Intel® Xeon® Processor E5410 (2.33 GHz, 80 Watts, 1333 FSB)
	Cache Memory	12MB (2 x 6MB) Level 2 cache - 5400 Sequence
	Memory	1 GB (2 x 512 MB) Level 2 cache
	Network Controller	Embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array E200/64MB Controller (RAID 0/1/1+0)
	Hard Drive	None ship standard
	Internal Storage	SAS: 4.8TB maximum with 16 SFF drive option SATA: 4.0TB maximum
	Optical Drive DVD-ROM standard after 11/12/07	48x CD-ROM (diskette optional)
	Availability	Redundant Power/Fans Optional
	Form Factor One of the following depending on Model	Tower Rack (5U), (8.75-inch)

Smart Buys

The ProLiant Smart Buy program offers a collection of promotional server and option products that are configured with SMB in mind, offered at discounted prices, and positioned for quick delivery. Smart Buy server offers are available for a limited time only.

S-Buy ML370T05 E5345 Processor(s)		(1) Quad-Core Intel Xeon Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB)
Tower		
470064-551	Cache Memory	8MB (2 x 4MB) Level 2 cache
	Memory	4 GB (2 x 2 GB), PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 533 MHz; 1 memory board
	Network Controller	Embedded Dual NC373i Multifunction Gigabit NICs
	Storage Controller	HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	None Ship Standard
	Internal Storage	2.336TB maximum
	Optical Drive	DVD-ROM Drive
	Availability	Hot Plug Fully Redundant power supplies standard; Optional Hot Plug Fully Redundant fans
	Form Factor	Tower

S-Buy ML370R05 E5440 Processor(s)		(1) Quad-Core Intel Xeon Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB)
Rack		
459039-005	Cache Memory	12MB (2 x 6MB) Level 2 cache
	Memory	2 GB (2 x 1 GB) PC2-5300 FBD (DDR2-667)
	Network Controller	Embedded Dual NC373i Multifunction Gigabit NICs
	Storage Controller	HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	None Ship Standard
	Internal Storage	2.336TB maximum
	Optical Drive	DVD-ROM Drive
	Availability	Hot Plug Fully Redundant fans and Hot Plug supplies standard
	Form Factor	Rack (5U), (8.75-inch)

S-Buy ML370T05 E5430 Processor(s)		(1) Quad Core Intel Processor E5430 (2.66 GHz, 80 Watts, 1333 FSB)
Tower		
470064-774	Cache Memory	12 MB (2 x 6 MB) Level 2 cache
	Memory	4 GB (2 x 2 GB), PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 533 MHz; 1 memory board
	Network Controller	Embedded Dual NC373i Multifunction Gigabit NICs
	Storage Controller	HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	None Ship Standard
	Internal Storage	2.336TB maximum
	Optical Drive	DVD-ROM Drive
	Availability	Hot Plug Fully Redundant power supplies standard; Optional Hot Plug Fully Redundant fans
	Form Factor	Tower

Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.

NOTE: HP does not allow factory integration of options into standard models listed above. Configure-to-order servers must start with a CTO Chassis.

NOTE: This product offering does not support HP Factory Express Server Configuration Level 1.

NOTE: FIO indicates that this option only available as a Factory Installable Option.

Step 1: Base Configuration (choose one of the following configurable models)

Models	HP ML370 G5 Rack SAS CTO Chassis	400606-B21
	Factory Integrated Model ships with:	
	Two embedded NC373i Multifunction Gigabit Server Adapters	
	Eight Hot Plug SAS Drive Bays	
	9 expansion slots - 7 PCI-Express x4 and 2 PCI-X 64-bit 133 MHz	
	Integrated Lights-Out 2 (iLO2)	
	800 Watt-CE Mark Compliant Hot Plug Power Supply	
	Three fans	
	Rack (5U)	
	HP ML370 G5 Tower SAS CTO Chassis	400607-B21
	Factory Integrated Model ships with:	
	Two embedded NC373i Multifunction Gigabit Server Adapters	
	Eight Hot Plug SAS Drive Bays	
	9 expansion slots - 7 PCI-Express x4 and 2 PCI-X 64-bit 133 MHz	
	Integrated Lights-Out 2 (iLO2)	
	800 Watt-CE Mark Compliant Hot Plug Power Supply	
	Three fans	
	Keyboard	
	2-button Mouse	
	Tower (5U)	

Step 1A: Choose Storage Controller (only one of the following)

Storage Controller	Smart Array P400/256 MB Controller	405132-B21
	NOTE: PCI Express.	
	HP Smart Array P400/512 MB BBWC Controller	411064-B21
	NOTE: PCI Express.	
	HP Smart Array E200/128 BBWC Controller	411508-B21
	NOTE: PCI Express.	
	HP Smart Array P600/256 BBWC Controller	337972-B21
	NOTE: PCI-X SA-P600 has internal and external connectors.	
	HP Smart Array 6404/512 FIO Controller	452240-B21

Configuration Information - Factory Integrated Models

Step 2: Choose Required Options (only one of the following from each list)

Processors

NOTE: If High Performance Model features are desired, 2nd processor is included in the Performance Pack part numbers in Step 3 below.

Quad-Core Processors

Quad-Core Intel® X5470 (3.33 GHz, 120 Watts, 1333 FSB) ML370 G5 FIO Kit	488039-L21
Quad-Core Intel® X5460 (3.16 GHz, 120 Watts, 1333 FSB) ML370 G5 FIO Kit	458408-L21
Quad-Core Intel® X5450 (3.00 GHz, 120 Watts, 1333 FSB) ML370 G5 FIO Kit	462711-L21
Quad-Core Intel® E5450 (3.00 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458410-L21
Quad-Core Intel® E5440 (2.83 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458412-L21
Quad-Core Intel® E5430 (2.66 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458414-L21
Quad-Core Intel® E5420 (2.50 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458416-L21
Quad-Core Intel® E5410 (2.33 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458418-L21
Quad-Core Intel® E5405 (2.00 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458420-L21

Dual-Core Processors

Dual-Core Intel® X5260 (3.33 GHz, 80 Watts, 1333 FSB) ML370G5 FIO Kit	458422-L21
1 GB FBD PC2-5300 2 x 512 MB Single Rank Kit	397409-B21
2 GB FBD PC2-5300 2 x 1 GB Dual Rank Kit	397411-B21
2 GB FBD PC2-5300 2 x 1 GB Low Power Single Rank Kit	461826-B21
4 GB FBD PC2-5300 2 x 2 GB Dual Rank Kit	397413-B21
4 GB FBD PC2-5300 2 x 2 GB Low Power Dual Rank Kit	461828-B21
8 GB FBD PC2-5300 2 x 4 GB Dual Rank Kit	397415-B21
8 GB FBD PC2-5300 2 x 4 GB Low Power Dual Rank Kit	466440-B21
ML370 G5 Memory Board Kit	403766-B21

NOTE: 2 Memory Board required for support of 4:1 interleaving; 2 boards included on Performance models.

NOTE: Memory Option Kits include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, please visit:
<http://h18004.www1.hp.com/products/servers/platforms/energyefficient/>.

Base Memory

Step 3: Choose Additional Factory Integratable Options

Optical Drives

CD-RW/DVD-ROM Combo Drive Option Kit	331346-B21
HP DVD±R/RW 16X Half Height	383974-B21
DVD-ROM Drive Option Kit	217053-B21

Integrated hypervisor (iHV)

VMware ESX Server 3i integrated hypervisor

integrated VMware ESX Server 3i 2P FIO	464668-B21
integrated VMware ESX Server 3i Enterprise 2P FIO	464669-B21

NOTE: For additional information and option kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12307_na/12307_na.html

Citrix XenServer integrated hypervisor

integrated XenServer HP Select Edition 2P/4P	464673-B21
integrated XenServer HP Enterprise Edition 2P/4P	464674-B21

Configuration Information - Factory Integrated Models

NOTE: For additional information and option kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/13018_na/13018_na.html

Performance Packs	The HP ProLiant ML370 G5 Performance Packs are necessary to configure a HP ProLiant ML370 G5 High Performance Model which includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The Performance Pack includes a 2nd processor, redundant fan, power supply, and memory expansion board.	
	NOTE: Must also select 217503-B21 to achieve parity to ML370 G5 High Performance Models.	
	HP ML370G5 X5450 HPM FIO Perf Pack	460928-B21
	HP ML370G5 E5345 HPM FIO Perf Pack	436374-B21

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Options" section below.

Options

NOTE: Some options may not be factory configurable. Please contact your local sales representative for additional information.

HP ProLiant ML370 Unique Options	ML370 G5 SAS SFF 8-bay Drive Cage Kit	401415-B21
	NOTE: 2nd drive cage requires a storage controller.	
	ML370 G5 Memory Board Kit	403766-B21
	NOTE: 2 Memory Boards required for support of 4:1 interleaving; 2 included with Performance models.	
	Tower to Rack Conversion ML370 G5 Kit	400899-B21
	X4/X8 PCIE Bus Expander	403724-B21
	Hot Plug Redundant Fan ML370 G5 Kit	400693-B21

HP Insight Control Management Suite

NOTE: Electronic licensing options are available for Insight Control suites software products. Please see the appropriate Insight Control QuickSpecs for additional information. www.hp.com/go/ice

HP Insight Control Environment

HP Insight Control Environment, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates 452148-B22

NOTE: This part number can be purchased as a single license or as multiple licenses with a single activation key. Customer will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. Only available directly from HP and select resellers in the Americas region.

HP Insight Control Management Software Media Kit 436222-B21

NOTE: Insight Software DVD media without licenses. Contains Insight Manager and Essentials software products and components licensed by Insight Control Environment suite. Uses an integrated installer to perform quick and accurate software installation and updates.

NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_na/12631_na.html

HP Insight Control Linux Edition

HP Insight Control Environment for Linux, Media pack (DVD) - No licenses included 464422-B22

NOTE: This optional Media pack DVD contains the ISO image for HP Insight Control Environment for Linux, HP System Insight Manager, HP Insight Power Manager, HP Virtual Machine Management Pack, and an integrated installer. Servers must be acquired separately.

NOTE: This Media pack is optional because the latest ISO image and latest updates may be downloaded at no cost from: <http://www.hp.com/go/ice-linux> (click on Download button).

HP Insight Control Environment for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates 464423-B22

NOTE: This part number can be used to purchase one (1) license with a single activation key. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

NOTE: One certificate is shipped for each license.

Options

NOTE: For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/13019_na/13019_na.html

Server Management Stand Alone Software Products

NOTE: Electronic licensing options are available for select software products. Please see the appropriate Insight Software standalone product QuickSpecs for additional information.

Deploy

HP Rapid Deployment Pack

HP Rapid Deployment Pack No Media 1-Server License including 1 year of 24x7 Technical Support and Updates 452151-B21

NOTE: This license allows 1 server to be deployed and managed via RDP. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service

NOTE: For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11053_na/11053_na.html

HP Server Migration Pack – Universal Edition

HP Server Migration Pack – Universal Edition, No Media, Physical / Virtual to ProLiant Single Migration License, including 1 year of 24x7 Technical Support and Updates 460750-B21

NOTE: This license allows 1 physical to ProLiant or virtual to ProLiant migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Server Migration Pack - Universal Edition, No Media, Physical / Virtual to Virtual Single Migration License, including 1 year of 24x7 Technical Support and Updates 460753-B21

NOTE: This license allows 1 physical to virtual or virtual to virtual migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Server Migration Pack - Universal Edition, No Media, 1-Year Unlimited Migration License, including 1 year of 24x7 Technical Support 460756-B21

NOTE: This license allows unlimited migrations (physical to ProLiant, physical to virtual, virtual to virtual, and virtual to ProLiant) for one year. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service

NOTE: For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12855_na/12855_na.html

Monitor

HP Insight Dynamics-VSE

HP Insight Dynamics-VSE with Insight Control Environment, 1-server license including 1 year of 24x7 Technical Support and Updates 483527-B21

NOTE: This license supports HP ProLiant ML/DL servers. Customer will receive a printed license entitlement certificate via physical shipment.

Options

HP Insight Dynamics-VSE without Insight Control Environment, 1-server license including 1 year of 24x7 Technical Support and Updates 483531-B21

NOTE: This license supports HP ProLiant ML/DL and c-Class Blade servers. Customer will receive via email a receipt and link to a license entitlement certificate.

NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13050_na/13050_na.html

Control

HP Integrated Lights-Out Select Pack

HP Integrated Lights-Out Select Pack, No Media, 1-Server License 452158-B21

NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_na/12362_na.html

HP Integrated Lights-Out Advanced Pack

HP Integrated Lights-Out Advanced Pack, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates 512485-B21

NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_na/12362_na.html

Optimize

HP Accelerated iSCSI Pack

HP Accelerated iSCSI Pack, No Media, Single License 452679-B21

NOTE: For use with a single NIC port. Contains one license with a unique license activation key and documentation.

NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12466_na/12466_na.html

HP Insight Power Manager (IPM)

HP Insight Power Manager, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates 452677-B21

NOTE: Customers purchasing this upgrade must already have an iLO Advanced or Select license on each managed server. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12623_na/12623_na.html

NOTE: Flexible and volume quantity license kits are available for Value Packs. Refer to <http://www.hp.com/servers/proliantessentials> or the various QuickSpecs for more information.

Options

Processor

Quad-Core Processors

Quad-Core Intel® Xeon® Processor X5470 (3.33 GHz, 120 Watts, 1333 FSB)	488039-B21
Quad-Core Intel® Xeon® Processor X5460 (3.16 GHz, 120 Watts, 1333 FSB)	458408-B21
Quad-Core Intel® Xeon® Processor X5450 (3.00 GHz, 120 Watts, 1333 FSB)	462711-B21
Quad-Core Intel® Xeon® Processor E5450 (3.00 GHz, 80 Watts, 1333 FSB)	458410-B21
Quad-Core Intel® Xeon® Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB)	458412-B21
Quad-Core Intel® Xeon® Processor E5430 (2.66 GHz, 80 Watts, 1333 FSB)	458414-B21
Quad-Core Intel® Xeon® Processor E5420 (2.50 GHz, 80 Watts, 1333 FSB)	458416-B21
Quad-Core Intel® Xeon® Processor E5410 (2.33 GHz, 80 Watts, 1333 FSB)	458418-B21
Quad-Core Intel® Xeon® Processor E5405 (2.00 GHz, 80 Watts, 1333 FSB)	458420-B21
Quad-Core Intel® Xeon® Processor X5365 (3.00 GHz, 120 Watts, 1333 FSB)	450321-B21
Quad-Core Intel® Xeon® Processor X5355 (2.66 GHz, 120 Watts, 1333 FSB)	433104-B21
Quad-Core Intel® Xeon® Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB)	433102-B21
Quad-Core Intel® Xeon® Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB)	437391-B21
Quad-Core Intel® Xeon® Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB)	433098-B21
Quad-Core Intel® Xeon® Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB)	433100-B21

Dual-Core Processors

Dual-Core Intel® Xeon® Processor X5260 (3.0 GHz, 80 Watts, 1333 FSB)	458422-B21
Dual-Core Intel® Xeon® Processor L5240 (3.0 GHz, 40 Watts, 1333 FSB)	461765-B21
Dual-Core Intel® Xeon® Processor X5160 (3.0 GHz, 80 Watts, 1333 FSB)	416198-B21
Dual-Core Intel® Xeon® Processor X5150 (2.67 GHz, 65 Watts, 1333 FSB)	416196-B21
Dual-Core Intel® Xeon® Processor X5140 (2.33 GHz, 65 Watts, 1333 FSB)	416194-B21
Dual-Core Intel® Xeon® Processor X5130 (2.0 GHz, 65 Watts, 1333 FSB)	416192-B21
Dual-Core Intel® Xeon® Processor X5120 (1.86 GHz, 65 Watts, 1066 FSB)	416190-B21
Dual-Core Intel® Xeon® Processor X5110 (1.6 GHz, 65 Watts, 1066 FSB)	416188-B21

Memory

1 GB FBD PC2-5300 2 x 512 MB Single Rank Kit	397409-B21
2 GB FBD PC2-5300 2 x 1 GB Dual Rank Kit	397411-B21
2 GB FBD PC2-5300 2 x 1 GB Low Power Single Rank Kit	461826-B21
4 GB FBD PC2-5300 2 x 2 GB Dual Rank Kit	397413-B21
4 GB FBD PC2-5300 2 x 2 GB Low Power Dual Rank Kit	461828-B21
8 GB FBD PC2-5300 2 x 4 GB Dual Rank Kit	397415-B21
8 GB FBD PC2-5300 2 x 4 GB Low Power Dual Rank Kit	466440-B21
ML370 G5 Memory Board Kit	403766-B21

NOTE: 2 Memory Board required for support of 4:1 interleaving; 2 boards included on Performance models.

NOTE: Memory Option Kits include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, please visit:

<http://h18004.www1.hp.com/products/servers/platforms/energyefficient/>.

Options

Smart Buy Memory	1 GB FBD PC2-5300 2 x 512 MB Kit	397409-S21
	2 GB FBD PC2-5300 2 x 1 GB Kit	397411-S21
	4 GB FBD PC2-5300 2 x 2 GB Kit	397413-S21
Internal Storage	ML370 G5 SAS SFF 8-bay Drive Cage Kit	401415-B21
	NOTE: Optional 2nd drive cage requires a dedicated storage controller.	
Diskette Drive	Floppy Drive ML350/370 G5 Kit	409582-B21
Optical Drives	CD-RW/DVD-ROM Combo Drive Option Kit	331346-B21
	HP DVD±R/RW 16X Half Height	383974-B21
Serial Port Kit	Parallel/Serial Port ML370/350 G5 Kit	401222-B21

Hard Drives

NOTE: Transfer rates of drives are dependent on the maximum transfer rate supported by the HBA or Controller. Refer to the HBA or Controller technical specifications for details.

SAS Hot Plug SFF Enterprise (ENT) Drives

HP 300GB 3G SAS 10K SFF DP ENT HDD	492620-B21
HP 146GB 3G SAS 10K SFF DP ENT HDD	418367-B21
HP 146GB 3G SAS 10K SFF SP HDD	431958-B21
HP 72GB 3G SAS 15K SFF DP ENT HDD	418371-B21
HP 72GB 3G SAS 15K SFF SP HDD	431935-B21
HP 72GB 3G SAS 10K SFF DP ENT HDD	384842-B21
HP 72GB 3G SAS 10K SFF SP HDD	375861-B21
HP 36GB 3G SAS 15K SFF DP ENT HDD	418369-B21
HP 36GB 3G SAS 15K SFF SP HDD	431933-B21

NOTE: SAS Enterprise drives have a 3 year warranty. Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.html

SATA Hot Plug Entry (ETY) Drives

HP 250GB 3G SATA 5.4K SFF ETY HDD	460355-B21
HP 120GB 1.5G SATA 5.4K SFF ETY HDD	458924-B21

NOTE: SATA hard drives have a 1-year warranty. Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13021_na/13021_na.html

Small Form Factor (SFF) SATA Hot Plug Drives

HP 120GB 1.5G SATA 5.4K SFF HDD	431786-B21
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NOTE: SATA hard drives have a 1-year warranty. Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/11940_na/11940_na.html

Storage Controllers

SAS Controllers



Options

Smart Array E200 Controller

HP Smart Array E200/128 BBWC Controller 411508-B21

128 MB BBWC (Battery-Backed Write Cache) Enabler 351580-B21

NOTE: Supports the Smart Array E200 Controller and Smart Array 642 Controller.

Smart Array E500 Controller

HP Smart Array E500/256MB Controller 435129-B21

Smart Array P400 Controller

HP Smart Array P400/256MB Controller 405132-B21

NOTE: Supports RAID 0/1/5.

HP Smart Array P400/512MB BBWC Controller 411064-B21

NOTE: Supports RAID 0/1/1+0/5/6.

512MB Battery-backed cache upgrade 405148-B21

NOTE: Supports the Smart Array P400 Controller.

Battery-backed write cache upgrade 383280-B21

NOTE: Supports the Smart Array P400 Controller.

Smart Array P600 Controller

HP Smart Array P600/256 BBWC Controller 337972-B21

NOTE: Supports external drive attach.

Smart Array P800 Controller

HP Smart Array P800/512 BBWC Controller 381513-B21

NOTE: Supports external drive attach.

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/12460_na/12460_na.html
(Smart Array E200 Controller)

http://h18000.www1.hp.com/products/quickspecs/12700_na/12700_na.html
(Smart Array E500 Controller)

http://h18000.www1.hp.com/products/quickspecs/12400_na/12400_na.html
(Smart Array P400 Controller)

http://h18000.www1.hp.com/products/quickspecs/12247_na/12247_na.html
(Smart Array P600 Controller)

http://h18000.www1.hp.com/products/quickspecs/12616_na/12616_na.html
(Smart Array P800 Controller)

SAS HBA

HP SC08Ge Host Bus Adapter 488765-B21

HP SC44Ge Host Bus Adapter 416096-B21

NOTE: When using the SC44Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required. Transfer rate: 1.5 Gb/s SATA, 3 Gb/s SAS.

HP 8 Internal Port SAS HBA with RAID 347786-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18004.www1.hp.com/products/quickspecs/12617_na/12617_na.html
(SC44Ge HBA)

http://h18004.www1.hp.com/products/quickspecs/12332_na/12332_na.html
(8 Internal Port SAS HBA)

SCSI Controllers for External Drive/Storage Support

Smart Array 6402/128 Controller 273915-B21

NOTE: Ultra320 SCSI.

Options

Smart Array 6404/256 Controller	273914-B21
NOTE: Ultra320 SCSI.	
Smart Array 642 Controller	291967-B21
NOTE: Ultra320 SCSI.	
128-MB BBWC (Battery-Backed Write Cache) Enabler	351580-B21
NOTE: Supports the Smart Array E200 Controller and Smart Array 642 Controller.	
64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
SCSI HBA	
HP SC11Xe Host Bus Adapter	412911-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information:	
http://h18000.www1.hp.com/products/quickspecs/11943_na/11943_na.html	
(Single Channel Ultra320 SCSI HBA)	
http://h18000.www1.hp.com/products/quickspecs/11587_na/11587_na.html	
(Smart Array 6400 Series)	
http://h18000.www1.hp.com/products/quickspecs/12069_na/12069_na.html	
(Smart Array 642)	
http://h18000.www1.hp.com/products/quickspecs/10429_na/10429_na.html	
(SCSI Adapter)	
http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.html	
(SC11Xe HBA)	
http://h18004.www1.hp.com/products/quickspecs/13082_na/13082_na.html	
(SC08Ge HBA)	

Communications

HP NC110T PCI Express Gigabit Server Adapter	434905-B21
HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
NOTE: There is a maximum of five NC364T PCI Express Quad Port Gigabit Server Adapters allowed in this server.	
HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter	394795-B21
NOTE: Supported on a Full Length-Full Height slot only.	
HP NC510F PCIe 10 Gigabit Server Adapter	414126-B21
NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510F adapter.	
HP NC510C PCIe 10 Gigabit Server Adapter	414129-B21
NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter.	
HP NC7170 PCI-X Dual Port 1000T Gigabit Server Adapter	313881-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs .	

Options

Redundant Options	Redundant Power Supply 350/370/380 G5 Kit (IEC Cord)	399771-B21
	Redundant Power Supply 350/370/380 G5 Kit (NEMA Cord)	399771-001
	Hot Plug Redundant Fan ML370 G5 Kit	400693-B21

Tape Drives

NOTE: For the complete listing of Tape Drive offerings, please see:
<http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

For recommended tape drive offerings for this ProLiant server see the following:

USB Tape Drives

HP DAT 160 USB Internal Tape Drive for ProLiant EH976A

SAS Tape Drives

NOTE: For the ML370 G5, HP recommends purchasing the HP SC44Ge HBA (416096-B21) for a dedicated SAS HBA for tape.

HP StorageWorks DAT 160 SAS Internal Tape Drive Q1587A

HP StorageWorks LTO-2 Ultrium 448 SAS Internal Tape DW085A

HP StorageWorks LTO-4 Ultrium 1760 SAS Internal Tape Drive EH919A

NOTE: Please refer to the "Tape Drives, Tape Autoloaders & Tape Libraries" table in the Storage section of this document for a list of SAS controllers with tape support.

SCSI Tape Drives

NOTE: For the ML370 G5, HP recommends purchasing the HP 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA (374654-B21) for a dedicated SCSI HBA for tape.

HP StorageWorks LTO-2 Ultrium 448 SCSI Internal Tape Drive (Carbonite) DW016A

NOTE: Please see the HP StorageWorks Ultrium Tape Drive QuickSpecs for additional options such as controllers, media, and other related items:
http://h18006.www1.hp.com/products/quickspecs/11739_na/11739_na.html
http://h18006.www1.hp.com/products/quickspecs/12128_na/12128_na.html

For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: <http://www.hp.com/go/connect>

Rack-Mount Tape Drive Enclosures

HP StorageWorks 1U SCSI Rack-Mount kit A7445B

NOTE: The 1U Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with multiple Single-Ended and LVD SCSI tape drives including the DAT 40, DAT 72, DAT 160, LTO-1 Ultrium 232, LTO-2 Ultrium 448, LTO-3 Ultrium 920 and LTO-4 Ultrium 1760 tape drives.

HP StorageWorks 1U USB Rack-Mount Kit A8007A

NOTE: The 1U USB Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the DAT 40 USB, DAT 72 USB and DAT 160 USB tape drives.

HP StorageWorks 1U SAS Rack-Mount Kit AE459A

NOTE: The 1U SAS Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the DAT 160 SAS, LTO-2 Ultrium 448 SAS, LTO-3 Ultrium 920 SAS and LTO-4 Ultrium 1760 tape drives.

NOTE: Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits:
http://h18000.www1.hp.com/products/quickspecs/10854_na/10854_na.html

Options

Disk-Based Backup

RDX Removable Disk Backup

HP StorageWorks RDX160 Internal Removable Disk Backup System AJ765A

NOTE: 160GB of Disk Storage.

HP StorageWorks RDX320 Internal Removable Disk Backup System AJ767A

NOTE: 320GB of Disk Storage.

HP StorageWorks RDX500 Internal Removable Disk Backup System AJ934A

NOTE: 500GB of Disk Storage.

D2D Backup

HP StorageWorks D2D120 Backup System EH884A

NOTE: 2TB of Disk Storage

HP StorageWorks D2D120 Backup System with Data Protector Express Software Kit EH924A

NOTE: 2TB of Disk Storage

HP StorageWorks D2D130 Backup System EH950A

NOTE: 3TB of Disk Storage.

HP StorageWorks D2D130 Backup System with Data Protector Express Software Kit EH951A

NOTE: 3TB of Disk Storage.

HP StorageWorks D2D130 Backup System with LTO-3 Ultrium 920 SAS Tape Drive EH952A

NOTE: 3TB of Disk Storage.

HP StorageWorks D2D2503i Backup System EH945A

NOTE: 3TB of Disk Storage.

HP StorageWorks D2D4004i Backup System EH938A

NOTE: 4.5TB of Disk Storage.

NOTE: Please see the HP D2D Backup Systems QuickSpecs for additional information: <http://www.hp.com/go/d2d>.

Tape Autoloaders

HP StorageWorks DAT Autoloader

HP StorageWorks DAT 72x10 tape autoloader AE313B

HP StorageWorks 1/8 G2 Tape Autoloader

HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader AK377A

HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SCSI Tape Autoloader AJ816A

HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 Tape Autoloader AH165A

HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 SAS Autoloader AH558A

HP StorageWorks 1/8 G2 LTO-2 Ultrium 448 Tape Autoloader AH164A

HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit AH166A

NOTE: Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions.

NOTE: Please reference the Tape Autoloader QuickSpecs at:

<http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at:

<http://www.hp.com/go/ebs>

Options

Tape Libraries

HP StorageWorks MSL2024 Tape Library

HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ033A
HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 4GB FC Library	AJ034A
HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SAS Drive Library	AK378A
HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SCSI Drive Library	AJ817A
HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 SCSI Drive Library	AG115A
HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 4GB FC Library	AG326B
HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Drive Library	AH559A
HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SCSI Drive Library	AH169A
HP StorageWorks MSL2024 1 LTO-2 Ultrium 448 SCSI Drive Library	AG116A

HP StorageWorks MSL4048 Tape Library

HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ035A
HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 4GB FC Library	AJ036A
HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Drive Library	AK380A
HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SCSI Drive Library	AJ817A
HP StorageWorks MSL4048 1 LTO-3 Ultrium 960 SCSI Drive Library	AG322A
HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SAS Drive Library	AH560A
HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SCSI Drive Library	AH171A

NOTE: Please reference the MSL Tape Library QuickSpecs at:

<http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at: <http://www.hp.com/go/ebs>.

High Availability Cluster Options

HP Serviceguard for Linux

HP Serviceguard Linux for HP ProLiant/x86 Servers Licensed per physical server Includes media and One Year 24x7 Software Support & Updates	463831-B21
HP Serviceguard Linux Oracle Database Toolkit for HP ProLiant/x86 Servers Licensed per cluster Includes media and One Year 24x7 Software Support & Updates	463833-B21
HP Serviceguard Extension for SAP on Linux for HP ProLiant/x86 Servers Licensed per physical server Includes media and One Year 24x7 Software Support & Updates	463834-B21
HP Serviceguard Linux Extended Distance Cluster (XDC) for HP ProLiant/x86 Servers Licensed per physical server Includes media and One Year 24x7 Software Support & Updates	463835-B21

NOTE: The above is not a complete list of all HP Serviceguard for Linux product numbers For a detailed list of supported configuration/certification options for HP Serviceguard for Linux please refer to the HP Serviceguard for Linux Configuration & Ordering Guide available at: <http://www.hp.com/go/sglx/info>.

NOTE: HP Serviceguard for Linux products running on x86 platforms now include one year of 24 x 7 Software Technical Support and Updates. Please see the Support Information section of the HP Serviceguard for Linux QuickSpecs for details.

NOTE: For additional information including a complete list of Product Numbers for HP Serviceguard for Linux, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11518_na/11518_na.html

Options

StorageWorks Options	NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	HP StorageWorks FC2142SR 4Gb PCI-e HBA	A8002A
	HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-e HBA	A8003A
	HP StorageWorks FC1142SR 4Gb PCI-e HBA	AE311A
	HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-e HBA	AE312A
	HP StorageWorks FC2143 4Gb PCI-X 2.0 -to-Fibre Channel HBA	AD167A
	HP StorageWorks FC2243 Dual Channel 4Gb PCI-X 2.0 HBA	AD168A
	HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA	AB429A
	HP StorageWorks FC1243 Dual Channel 4Gb PCI-X 2.0 HBA	AE369A
	HP StorageWorks 81Q PCI-e FC HBA	AK344A
	HP StorageWorks 8Gb Simple SAN Connection Kit	AK241A
	HP StorageWorks 8/20q Fibre Channel Switch	AK242A
	HP StorageWorks 81E 8Gb SP PCI-e FC HBA	AJ762A
	HP 82E 8Gb Dual-port PCI-e FC HBA	AJ763A
	HP 82Q 8Gb Dual Port PCI-e FC HBA	AJ764A
	StorageWorks SCSI HBA	
	HP U320e SCSI Host Bus Adapter	AH627A
	NOTE: Recommended Dual Channel Ultra320 SCSI Controller for connecting multi-drive MSL tape libraries to ProLiant servers.	

HP StorageWorks 50 Modular Smart Array	HP StorageWorks 50 Modular Smart Array	364430-B21
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12245_na/12245_na.html	

HP StorageWorks 60 Modular Smart Array	HP StorageWorks 60 Modular Smart Array	418408-B21
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12627_na/12627_na.html	

HP StorageWorks 70 Modular Smart Array	HP StorageWorks 70 Modular Smart Array Enclosure	418800-B21
	NOTE: Please see the Modular Smart Array 70 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/12652_na/12652_na.html	

Options

Uninterruptible Power Systems - Tower	HP T1000v Uninterruptible Power System	
	HP T1000v UPS	AF443A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13130_na/13130_na.html	
	HP T1500 G3 UPS Models	
	HP T1500 G3 UPS	AF450A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13160_na/13160_na.html	
Uninterruptible Power Systems - Rack	HP R1500 G2 UPS	
	HP, R1.5kVA UPS, 1U	AF419A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12507_na/12507_na.html	
	HP R3000 UPS	
	HP R3000 VA UPS, 2U, L5-30	AF422A
	HP R3000 VA UPS, 2U, L6-20	AF423A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/10671_na/10671_na.html	
	HP R3000v Uninterruptible Power System	
	HP R3000v UPS	AF444A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13129_na/13129_na.html	
	HP Rack-Mountable R5500 UPS	
	HP R5500 VA UPS	AF426A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11871_na/11871_na.html	
HP Monitored Power Distribution Unit (PDU)	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 17.3 kVA S2324 Monitored PDU- dual input, 3Ø24A	AF503A
	HP 8.6 kVA S1324 Monitored PDU- single input, 3Ø, 24A	AF504A
	HP 16.6 kVA S2140 Monitored PDU- dual input, 1Ø, 40A	AF505A
	HP 8.3 S1140 Monitored PDU- single input, 1Ø, 40A	AF506A
	HP Monitored Power Distribution Unit: Half Rack Version	
	HP 4.9 kVA S124 Monitored PDU- single input, 1Ø, 24A	AF914A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12118_na/12118_na.html	

Options

Modular Power Distribution Units 1U/0U (up to 32 outlets) NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	Fixed Cord Extension Bars	351655-B21
	NOTE: Two extension bar sticks; each with (7) C13 plugs.	
	2.8 kVA Model - mPDU, 24A, Low	252663-D71
	4.9kVA Model - mPDU, 24A, High	252663-D72
	8.3kVA Model - mPDU, 40A, High (power cord attached)	252663-D73
	NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu	
USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	1.44MB External USB Floppy Drive	DC141B
	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 1GB USB 2.0 Floppy Drive Key	442085-B21
HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack-Unassembled	358254-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12074_na/12074_na.html	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower .	
HP Rack 10000 G2 Series (Carbon/Graphite Metallic)	10642 G2 (42U) Rack Cabinet - Pallet	AF001A
	10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A
	10642 G2 (42U) Rack Cabinet - Crated	AF003A
	10642 G2 (42U) Rack Cabinet, with Extension - Shock Pallet	AF004A
	10636 G2 (36U) Rack Cabinet - Pallet	AF011A
	10636 G2 (36U) Rack Cabinet - Shock Pallet	AF012A
	10636 G2 (36U) Rack Cabinet - Crated	AF013A
	10636 G2 (36U) Rack Cabinet, with Extension - Shock Pallet	AF014A
	10622 G2 (22U) Rack Cabinet - Pallet	AF021A
	10622 G2 (22U) Rack Cabinet - Shock Pallet	AF022A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Shock Pallet	AF034A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Pallet	AF038A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Pallet	AF041A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Shock Pallet	AF042A
	10647 G2 (47U) Rack Cabinet - Pallet	AF031A
	HP S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Shock Pallet	AF044A
	NOTE: Due to handling and shipping requirements, AF044A is only orderable through HP Factory Express. It is not for direct sales. Customer site surveys are required before an order is approved. CTO orders may require additional lead time.	
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Pallet	AF045A

Options

NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.

NOTE: xxxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels).

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.html

NOTE: For additional information regarding Rack Cabinets, please see the following URL: <http://www.hp.com/go/rackandpower>.

Keyboards and Monitors	TFT7600 Rackmount Keyboard Monitor	AG052A
	1U Rackmount Keyboard with USB	AG072A
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower .	

HP KVM Switch Options	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	2x16 Server Console Switch with Virtual Media	AF600A
	PS/2 Virtual Media Interface Adapter, 1 pack	AF604A
	NOTE: Requires PS/2 and one USB port on server.	
	Server Console Switch (KVM), 0 x 1 x 8 port	336044-B21
	Server Console Switch (KVM), 0 x 2 x 16 port	336045-B21
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm .	
	HP 1x4 Console Switch	AF611A
	PS2 Server Console Cable, 6 ft, 2 pack	AF612A
	USB Server Console Cable, 6 ft, 2 pack	AF613A
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm .	

HP Serial Console Server Options	HP 16 Port Serial Console Server	AF101A
	HP 48 Port Serial Console Server	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A
	NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm .	
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm .	

Options

Service and Support Offerings (HP Care Pack Services)

Hardware Services On-site Service

NOTE: To attach 3 year, 4-Hour On-site Service to Smart Buy servers, Smart Buy Care Packs must be used. For other service levels, order standard Care Pack part numbers.

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic U4528E

4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic U4529E

NOTE: Use one of the following Smart Buy Care Packs to attach 3 year, 4-Hour On-site Service to Smart Buy servers. For other service levels, order standard Care Pack part numbers.

ML370 Smart Buy 4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic UE903E

ML370 Smart Buy 4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UE904E

Hardware Services 6-Hour Call to Repair On-site Service

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic U4530E

Installation & Start-up Services

Hardware Installation, Electronic U4538E

Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic U4539E

Support Plus

Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic U4540E

Support Plus 24

Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic U4541E

Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic U6311E

Onsite HW support 24x7, 4hr response and Red Hat ES Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic U8333E

NOTE: For more information, customer/resellers can contact:
<http://www.hp.com/services/carepack>.

Memory

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".

NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

HP ProLiant ML370 G5 Models

Minimum Memory

1 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 533 MHz (2 x 512 MB)

Maximum Memory Replaced with Optional Memory

Up to 64 GB of memory is available with the removal of the standard 1 GB of memory. With 2 memory cards: 4 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 533 MHz (16 x 4 GB with 2 memory cards).

NOTE: Not all FB DIMM sizes available at product launch.

NOTE: This chart does not represent all possible memory configurations.

NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

Memory			Slot							
			1	2	3	4	5	6	7	8
Standard	1 GB		512 MB	Empty	Empty	Empty	512 MB	Empty	Empty	Empty
Maximum	64 GB	1 st card	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB
		2 nd card	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB

Following are memory options available from HP:

1 GB FBD PC2-5300 2 x 512 MB Single Rank Kit 397409-B21

2 GB FBD PC2-5300 2 x 1 GB Dual Rank Kit 397411-B21

2 GB FBD PC2-5300 2 x 1 GB Low Power Single Rank Kit 461826-B21

4 GB FBD PC2-5300 2 x 2 GB Dual Rank Kit 397413-B21

4 GB FBD PC2-5300 2 x 2 GB Low Power Dual Rank Kit 461828-B21

8 GB FBD PC2-5300 2 x 4 GB Dual Rank Kit 397415-B21

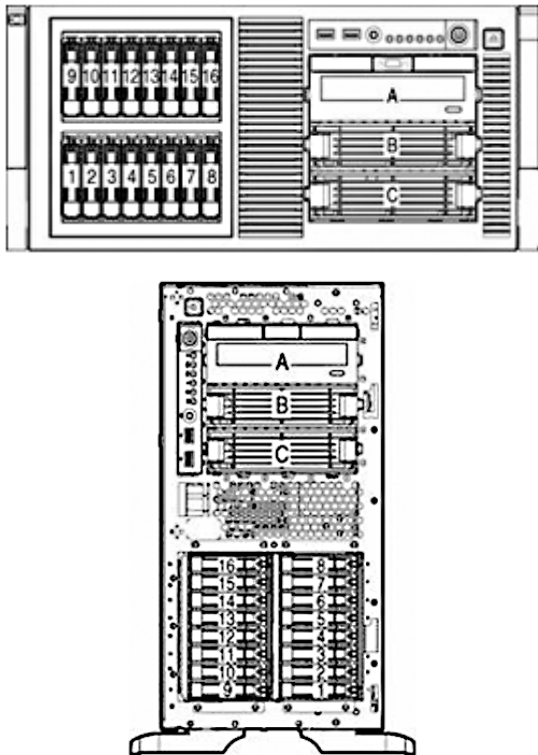
8 GB FBD PC2-5300 2 x 4 GB Low Power Dual Rank Kit 466440-B21

ML370 G5 Memory Board Kit 403766-B21

NOTE: 2 Memory Board required for support of 4:1 interleaving; 2 boards included on Performance models.

NOTE: Memory Option Kits include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, please visit: <http://h18004.www1.hp.com/products/servers/platforms/energyefficient/>.

Storage



- A DVD-ROM Drive (Performance Models)/48x IDE CD-ROM Drive (Base and Entry Models)
- B, C DVD-ROM Drive (Performance Models)/48x IDE CD-ROM Drive (Base and Entry Models)
Optional media bay for internal tape drive
- 1-16 (16) hot-plug Serial-attached SCSI (SAS) drives supported
- A DVD-ROM Drive (Performance Models)/48x IDE CD-ROM Drive (Base and Entry Models)
- B, C DVD-ROM Drive (Performance Models)/48x IDE CD-ROM Drive (Base and Entry Models)
Optional media bay for internal tape drive
- 1-16 (16) hot-plug Serial-attached SCSI (SAS) drives supported

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
IDE CD-ROM Drive	Up to 2	A, B	Integrated IDE
DVD-ROM Drive Option Kit (optional)	Up to 2	A, B	Integrated IDE

Storage

Hard Drives

NOTE: Transfer rates of drives are dependent on the maximum transfer rate supported by the HBA or Controller. Refer to the HBA or Controller technical specifications for details.

SAS Hot Plug SFF Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
300GB 3G SAS 10K DP	Up to 16	1-16	HP Smart Array E200/64MB Controller
146GB 3G SAS 10K SP			HP Smart Array E200/128 BBWC Controller
146GB 3G SAS 10K DP			HP Smart Array E500/256MB Controller
72GB 3G SAS 10K SP			HP Smart Array P400/256MB Controller
72GB 3G SAS 10K DP			HP Smart Array P400/512MB BBWC Controller
72GB 3G SAS 15K SP			HP Smart Array P600/256 BBWC Controller
72GB 3G SAS 15K DP			HP Smart Array P800/512 BBWC Controller
36GB 3G SAS 15K SP			
36GB 3G SAS 15K DP			

SATA Hot Plug Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 5.4K	Up to 16	1-16	HP 8 Internal Port SAS HBA with RAID
120GB 1.5G SATA 5.4K			HP Smart Array E200/64 MB Controller
			HP Smart Array E200/128 BBWC Controller
			HP Smart Array E500/256MB Controller
			HP Smart Array P400/256 MB Controller
			HP Smart Array P400/512 MB BBWC Controller
			HP Smart Array P600/256 BBWC Controller
			HP Smart Array P800/512 BBWC Controller

Small Form Factor (SFF) SATA Hot Plug Drives

	Quantity Supported	Position Supported	Controller
120GB 1.5G SATA 5.4K	Up to 16	1-16	HP 8 Internal Port SAS HBA with RAID
			HP Smart Array E200/64 MB Controller
			HP Smart Array E200/128 BBWC Controller
			HP Smart Array E500/256MB Controller
			HP Smart Array P400/256 MB Controller
			HP Smart Array P400/512 MB BBWC Controller
			HP Smart Array P600/256 BBWC Controller
			HP Smart Array P800/512 BBWC Controller

Storage

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
50 Modular Smart Array	1 per external VHDCI SCSI connector	External	HP Smart Array P600/256 BBWC Controller
60 Modular Smart Array	Up to 8	External	HP Smart Array E500/256MB Controller
	Up to 4		HP Smart Array P600/256 BBWC Controller
	Up to 8		HP Smart Array P800/512 BBWC Controller
70 Modular Smart Array	Up to 4	External	HP Smart Array E500/256MB Controller
	Up to 2		HP Smart Array P600/256 BBWC Controller
	Up to 4		HP Smart Array P800/512 BBWC Controller

Tape and Disk-Based Backup

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following: http://h18000.www1.hp.com/products/quickspecs/north_america/10233.html

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Autoloaders and Tape Libraries listed below, please see the following: http://h18000.www1.hp.com/products/quickspecs/north_america/10809.html

NOTE: For complete listing of tape drive offerings see:
<http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

NOTE: SAS Tape Drives: Connecting hard drive cage and SAS tape to the same SAS Controller using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

	Position Supported	Controller	Controller/HBA Option Kit Part Number
Internal USB Tape Drives DAT 40 USB DAT 72 USB DAT 160 USB	B,C	USB 2.0 Port	N/A
USB Tape Drives, External DAT 40 USB DAT 72 USB DAT 160 USB 1U Rack-Mount Kit	External	USB 2.0 Port	N/A
SCSI Tape Drives, Internal LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760	B,C	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21

Storage

DAT 40
DAT 72
DAT 160

SCSI Tape Drives, Internal LTO-3 Ultrium 960 LTO-4 Ultrium 1840	B+C	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
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SCSI Tape Drives, External LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 960 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 1U Rack-Mount Kit 3U Rack-Mount Kit	External	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
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SAS Tape Drives, Internal DAT 160 SAS LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS LTO-4 Ultrium 1760 SAS	B,C	HP SC44Ge Host Bus Adapter	416096-B21
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SAS Tape Drives, Internal LTO-4 Ultrium 1840 SAS	B+C	HP SC44Ge Host Bus Adapter	416096-B21
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SAS Tape Drives, External DAT 160 SAS LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS LTO-4 Ultrium 1760 SAS LTO-4 Ultrium 1840 SAS 1U Rack-Mount 3U Rack-Mount	External	HP SC44Ge Host Bus Adapter	416096-B21
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SCSI Tape Automation, External DAT 72x10 Autoloader 4U QD Autoloader	External	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
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Storage

1/8 G2 Autoloader
MSL2024
MSL4048
MSL8096
MSL6000

HP U320e SCSI Host Bus Adapter
NOTE: Recommended for MSL tape libraries.

AH627A

SAS Tape Automation, External

External

HP SC44Ge Host Bus Adapter

416096-B21

1/8 G2 Autoloader
MSL2024
MSL4048
MSL8096

Fibre Tape Automation, External

External

Please consult the EBS connectivity matrix at:
<http://www.hp.com/go/ebs> for detailed connectivity information.

N/A

MSL2024
MSL4048
MSL8096
MSL6000

HP StorageWorks RDX Removable Disk Backup System, Internal

B,C

USB 2.0 Port

N/A

RDX160
RDX320
RDX500

HP StorageWorks RDX Removable Disk Backup System, External

External

USB 2.0 Port

N/A

RDX160
RDX320
RDX500

HP StorageWorks D2D Backup Systems

External

Embedded Network Controller

N/A

D2D120
D2D130
D2D2503i
D2D4004i

Power Specifications

Part Number	380622-001
Spare Kit	403781-001
Operational Input Voltage Range (V rms)	90 to 264
Frequency Range (Nominal) (Hz)	47 to 63 (50/60)

Nominal Input Voltage (Vrms)	100	120	208	220	230	240
Max Rated Output Wattage Rating	800	950	1000	1000	1000	1000
Nominal Input Current (A rms)	10.0	8.8	5.85	5.5	5.2	4.97
Max Rated Input Wattage Rating (Watts)	980	1035	1193	1186	1172	1169
Max. Rated VA (Volt-Amp)	1000	1056	1217	1210	1196	1193
Efficiency (%)	81.5	82	84	84	85	85.5
Power Factor	0.98	0.98	0.98	0.98	0.98	0.98
Leakage Current (mA)	0.44	0.52	0.91	0.96	1.00	1.04
Maximum Inrush Current (A peak)	30	30	30	30	30	30
Maximum Inrush Current duration (mS)	3	3	3	3	3	3

NOTES:

- The Active Answers Power Calculator should be used prior to deployment to determine the system power ratings. For proper operation, ensure the nominal input voltage selected (e.g. low line or high line) provides a max rated output wattage rating greater than the system power ratings.
- The Active Answers Power Calculator is available via the online tool located at URL:
<http://h30099.www3.hp.com/configurator/powercalcs.asp>.
- To drill down to calculators:
 - Click on: "ProLiant Servers"
 - Click on the Server of interest. Example: ML370 G5
 - Click on: "Power Calculator" link. (You may need to scroll down to see it)

Power Cords (13 Cord Sets, 1.83m)	Power Cord Part Number
	121565-001

Technical Specifications

System Unit	Tower Dimensions (H x W x D) (with bezel)	18.38 x 8.63 x 28.5 in (46.67 x 21.92 x 72.39 cm)	
	Rack Dimensions (H x W x D) (with bezel)	8.63 x 17.5 x 26.5 in (21.92 x 44.45 x 67.31 cm)	
	Tower Weight (approximate)	Maximum	77 lbs (34.93 kg)
		(two hard drives, power supply, and processor installed)	
	Rack Weight (approximate)	Maximum	68 lbs (30.84 kg)
		(two hard drives, power supply, and processor installed)	
	Input Requirements (per power supply)	Rated Line Voltage	90 - 132 VAC, 180 - 264 VAC
		Rated Input Current	7.5A (at 100 VAC), 3.8A (at 200 VAC)
	BTU Rating	Rated Input Frequency	47 to 63 Hz
		Rated Input Power	980W (at 100 VAC) 1035W (at 120 VAC) 1170W (at 240 VAC)
	Power Specifications	To review typical system power ratings use the Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls	
		- Click on the system of interest. Example: ML370 G5	
		- Follow the instructions of the next screens.	
	Power Supply Output (per power supply)	Rated Steady-State Power	800 W (at 100 VAC) 850 W (at 120 VAC) 1000 W (at 200-240 VAC)
		Maximum Peak Power	800 W (at 100 VAC) 850 W (at 120 VAC) 1000 W (at 200-240 VAC)
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be

Technical Specifications

		limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
Relative Humidity (non-condensing)	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
Altitude	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
Emissions Classification (EMC)	Idle	
	LWAd	6.2 B for Redundant 6.3 B for Non-Redundant
	LpAm	43 dBA for Redundant 44 dBA for Non-Redundant
	Operating	
	LWAd	6.2 B for Redundant 6.3 B for Non-Redundant
	LpAm	43 dBA for Redundant 44 dBA for Non-Redundant
	FCC Rating	Class B
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.



Technical Specifications

Smart Array P400 Controller	Disk Drive and Enclosure Interface	3G SAS (Serial Attached SCSI) 1.5G SATA (Serial Advanced Technology Attachment)
	SAS Connectors	2 internal (SFF8484) x4 wide port connectors
	Cache Memory Speed	DDR2-533MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	x8 2.5G PCIe provides 2GB/s maximum bandwidth.
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.
	Cache Memory	40-bit 256MB cache (72-bit 512MB module upgrades available); ECC protection, battery-backed, and transportable
	Logical Drives Supported	Up to 32 logical drives
	Maximum Logical Drive Capacity	3 TB (6 x 500GB)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6 with ADG (Advanced Data Guarding) requires Battery Backed Write Cache Upgrade
		RAID 5 (Distributed Data Guarding)
		RAID 1+0 (Striping & Mirroring)
		RAID 0 (Striping)

Smart Array E200 Controller	Disk Drive and Enclosure Interface	3G SAS (Serial Attached SCSI) 1.5G SATA (Serial Advanced Technology Attachment)
	SAS Connectors	2 internal (SFF8484) x4 wide port connectors
	Cache Memory Speed	DDR1-266 MHz provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	x8 2.5G PCIe provides 2GB/s maximum bandwidth.
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.
	Cache Memory	40-bit 256MB cache (72-bit 512MB module upgrades available); ECC protection, battery-backed, and transportable
	Logical Drives Supported	Up to 32 logical drives
	Maximum Logical Drive Capacity	3 TB (6 x 500GB)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6 with ADG (Advanced Data Guarding) requires Battery Backed Write Cache Upgrade
		RAID 5 (Distributed Data Guarding)
		RAID 1, 1+0 (Striping & Mirroring)
		RAID 0 (Striping)

Technical Specifications

Two embedded NC373i Multifunction Gigabit Server Adapters	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000BaseTX (Half and Full-Duplex)	2000 Mb/s
	Connector	RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green . To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.	
		The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green . These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.	

Technical Specifications

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.